

REMARKS

In light of the following remarks, reconsideration of the present application is requested. Claims 1, 3, 5-36, and 39-43 are pending in the application. Claims 1, 33, and 41 are independent claims. Claims 2, 4, 37, 38, and 44-46 are canceled. No new matter has been added.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 3, 5, 6, 7, and 33-35 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,960,038 (hereinafter "Lupfer") as extrinsically evidenced by U.S. Patent No. 3,597,517 (hereinafter "Smith"). The Applicants respectfully traverse.

Initially, the Applicants submit Lupfer fails to disclose a "tube" as recited in claims 1 and 33. Lupfer discloses a pump using an accordion-like bellows. The Applicants submit that one skilled in the art would not consider a bellows having convolutions to be a "tube." For example, whereas a "tube" structure may be usable for pumping slurries, Lupfer's bellows is not since dirt and other large particles present in the slurry would collect in the convolutions of the bellows. For at least this reason the Applicants submit Lupfer does not anticipate claims 1 and 33.

Additionally, the Applicants submit claim 1 is not anticipated by Lupfer at least because Lupfer fails to disclose "the tube structure being movable between **laterally** expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes," as recited in claim 1. Furthermore, the Applicants also submit claim 1 is not anticipated by Lupfer at least because Lupfer fails to disclose "the pumping chamber being configured to receive pumped fluid to

cause the tube structure to move towards the expanded condition,” as recited in claim 1.

Lupfer discloses a bellows pump which includes a cylindrical hollow pump body 40 enclosing a bellows 48 and a compression spring 74. The cylindrical pump body 40 is attached to a base 41 which includes an air supplying conduit 62 to supply air into the bellows chamber 63 via passage 61. The bellows 48 is secured at one end by a nipple 44 (for example, by soldering) and at another end by a plug 49.

The plug 49, attached to one end of the bellows 48, is threadingly engaged with a rod 67. The rod 67, together with the lock nut 65, top cap 64, and stop member 71, controls the length of the compression stroke of the bellows 48. As explained in column 3, lines 12-16 of Lupfer's disclosure:

A stop member 71 is attached to the lower end of rod 67 by a screw 72. The upward movement of rod 67 is thus terminated when member 71 engages cap 64. The length of the compression stroke of bellows 48 can readily be adjusted by movement of cap 64.

Accordingly, the Applicants submit that during operation, the bellows 48 contracts and expands **axially** (like an accordion) with respect to the axis of the pump body 40 and the bellows 48 to pump or receive fluid from the check valve assembly 53. Further, Lupfer clearly states that the rate of pumping is a function of the length of the compression stroke of the bellows 48, which is controlled by the cap 64 and the rod (see column 3, lines 62-66, see also column 3, lines 3-20).

The Examiner alleges that the “tube structure” of claim 1 reads on Lupfer's bellows 48. Assuming the Examiner is correct (which is not admitted), the Applicants submit that Lupfer's alleged “tube structure” 40 is not “movable between **laterally expanded and collapsed conditions** ...,” as recited in claim 1. Rather, Lupfer's alleged tube structure 40 is movable between **axially** expanded and collapsed

conditions. For at least this reason, the Applicants submit claim 1 is not anticipated by Lupfer.

The Examiner insists that Smith teaches that it is well-known that bellows can be made of substantially inelastic material, however, the Applicants point out that Smith's disclosure does not disclose a bellows having elastic properties similar to the elastic properties of the tube recited in claim 1. For example, Smith clearly teaches that "[a] bellows used as an accurate pumping element in a metering pump, for example, should be **substantially rigid in a radial direction** and **easily flexible in an axial direction**." (column 1, lines 31-33). Additionally, Smith clearly discloses that the "primary object" of his invention is "to provide a method of forming a plastic bellows having **a substantial radial rigidity** and long-lived axial flexibility..." (see column 1, lines 70-73). Therefore Smith does not disclose a bellows having the elastic properties of the "tube" recited in claim 1. In other words, Smith does not disclose a tube structure having elastic properties that enable it to be "movable between **laterally expanded and collapsed conditions** ...," as recited in claim 1. Rather, Smith teaches a bellows that is axially expandable and collapsible.

Additionally, the Applicants submit the use of Smith as extrinsic evidence is improper. Smith is drawn to a method of making plastic bellows whereas the bellows disclosed by Lupfer are metal.

In addition to the above feature not being taught by either Lupfer or Smith, the Applicants note that Lupfer also fails to disclose, at least, "the pumping chamber being configured to receive pumped fluid to cause the tube structure to move towards the expanded condition," as recited in claim 1.

As noted above, Lupfer's bellows pump includes a compression spring 74 to retain the bellows 48 expanded in the absence of fluid pressure (see column 3, lines

16-19, see also column 3, lines 51-52). Accordingly, it is Lupfer's compression spring 74, not Lupfer's alleged pumping chamber, that causes Lupfer's alleged tube structure to move towards an expanded condition. Accordingly, Lupfer fails to disclose "the pumping chamber being configured to receive pumped fluid to cause the tube structure to move towards the expanded condition," as recited in claim 1.

For at least the reasons given above, the Applicants respectfully request the rejection of claim 1, and all claims which depend thereon, under 35 U.S.C. § 102(b) as being anticipated by Lupfer be withdrawn.

For somewhat similar reasons, the Applicants respectfully request the rejection of claim 33, and all claims which depend thereon, under 35 U.S.C. § 102(b) as being anticipated by Lupfer be withdrawn.

Claim Rejections Under 35 U.S.C. § 103

Claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith and in view of U.S. Patent No. 2,971,465 (hereinafter "Caillaud"). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a "tube structure being movable between **laterally** expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes," as recited in claim 1. Caillaud does not disclose or suggest, nor does the Examiner rely on Caillaud for disclosing or suggesting, a "tube structure being movable between **laterally** expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes." Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer and Caillaud. Accordingly, the

Applicants submit the Examiner has failed to show that claims 8 and 9, which depend from claim 1, are like wise nonobvious.

For at least the reasons given above, the Applicants respectfully request the rejection of claims 8 and 9 under 35 U.S.C. § 103 as being obvious over Lupfer as extrinsically evidence by Smith in view of Caillaud be withdrawn.

Claims 10, 11, 12, and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith and in view of U.S. Patent No. 4,439,112 (hereinafter "Kitsnik"). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a "tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes," as recited in claim 1. Kitsnik does not disclose or suggest, nor does the Examiner rely on Kitsnik for disclosing or suggesting, a "tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes." Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer and Kitsnik. Accordingly, the Applicants submit the Examiner has failed to show that claims 10, 11, 12, and 14, which depend from claim 1, are like wise nonobvious.

For at least the reasons given above, the Applicants respectfully request the rejection of claims 10, 11, 12, and 14 under 35 U.S.C. § 103 as being obvious over Lupfer as extrinsically evidence by Smith in view of Kitsnik be withdrawn.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith and in view of Kitsnik and in further view of U.S. Patent No. 3,427,987 (hereinafter "Eull"). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a "tube structure being movable between **laterally** expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes," as recited in claim 1. Neither Kitsnik nor Eull disclose or suggest, nor does the Examiner rely on either Kitsnik or Eull for disclosing or suggesting, a "tube structure being movable between **laterally expanded and collapsed conditions** for varying the volume of the pumping chamber thereby to provide discharge and intake strokes." Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer, Kitsnik, and Eull. Accordingly, the Applicants submit the Examiner has failed to show that claim 13, which depends from claim 1, is like wise nonobvious.

For at least the reasons given above, the Applicants respectfully request the rejection of claim 13 under 35 U.S.C. § 103 as being obvious over Lupfer as extrinsically evidence by Smith in view of Kitsnik and Eull be withdrawn.

Claims 15-20, 23-26, 28-32, 36, 39, and 41-43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith and in view of Caullaud and in further view of U.S. Patent No. 3,250,226 (hereinafter "Voelker"). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a "tube structure being movable between **laterally** expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake

strokes,” as recited in claim 1. Neither Caullaud nor Voelker suggest or disclose, nor does the Examiner rely on either Caullaud or Voelker for suggesting or disclosing, a “tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes.” Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer, Caullaud and Voelker. Accordingly, the Applicants submit the Examiner has failed to show that claims 15-20, 23-26, 28-32, 36, and 39, which depend from claim 1, are like wise nonobvious. For somewhat similar reasons, the Applicants submit claims 41-43 are likewise nonobvious over the combination of Lupfer, Smith, Caullaud, and Voelker.

For at least the reasons given above, the Applicants respectfully request the rejection of claims 15-20, 23-26, 28-32, 36, 39, and 41-43 under 35 U.S.C. § 103 as being obvious over Lupfer as extrinsically evidenced by Smith in view of Caullaud and Voelker be withdrawn.

Claims 17, 21, and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith in view of Caullaud and in further view of Voelker and in further view of U.S. Patent No. 5,964,580 (hereinafter “Taga”). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a “tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes,” as recited in claim 1. Neither Caullaud nor Voelker nor Taga suggest or disclose, nor the Examiner assert that either Caullaud or Volker or Taga suggests or discloses, a “tube structure being movable between laterally expanded and collapsed

conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes.” Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer, Caullaud, Voelker, and Taga. Accordingly, the Applicants submit the Examiner has failed to show that claims 17, 21, and 22, which depend from claim 1, are like wise nonobvious.

For at least the reasons given above, the Applicants respectfully request the rejection of claims 17, 21, and 22 under 35 U.S.C. § 103 as being obvious over by Lupfer as extrinsically evidence by Smith in view of Caullaud, Voelker, and Taga be withdrawn.

Claims 27 and 40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lupfer as extrinsically evidenced by Smith in view of Caullaud and in further view of Voelker and in further view of U.S. Patent No. 2,027,104 (hereinafter “Kahr”). The Applicants respectfully traverse.

As argued above, the Applicants submit Lupfer fails to disclose, at least, a “tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes,” as recited in claim 1. Neither Caullaud nor Voelker nor Kahr suggest or disclose, nor does the Examiner rely on either Caullaud or Voelker or Kahr for suggesting or disclosing, a “tube structure being movable between laterally expanded and collapsed conditions for varying the volume of the pumping chamber thereby to provide discharge and intake strokes.” Accordingly, the Applicants submit the Examiner has failed to establish that claim 1 is *prima facie* obvious over the combination of Lupfer, Caullaud, Voelker, and Kahr. Accordingly, the Applicants

submit the Examiner has failed to show that claims 27 and 40, which depend from claim 1, are like wise nonobvious.

For at least the reasons given above, the Applicants respectfully request the rejection of claims 27 and 40 under 35 U.S.C. § 103 as being obvious over by Lupfer as extrinsically evidence by Smith in view of Caullaud, Voelker, and Kahr be withdrawn.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1, 3, 5-36, and 39-43 in connection with the present application is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants hereby petition for a three (3) month extension of time for filing a reply to the outstanding Office Action and submit the required \$\$1,110.00 extension fee herewith.

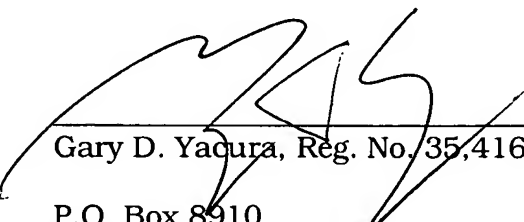
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Gary D. Yacura at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. §1.17; particularly, extension of time fees.

Respectfully submitted,

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By



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